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Structure and intramolecular lability of N-(thio)phosphoryl(thio)amides: V. Dynamic properties of crown-containing N,N′-bis(thio)phosphoryl(thio)carbonylamides by 1H, 13C, and 31P NMR spectroscopy

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Abstract

The structure and intramolecular transformations of the N,N′-bis[diisopropoxy(thio)phosphoryl(thio)carbonyl]-1,10-diaza-18-crown-6 ethers in CCl4, CDCl3, CD2Cl2, (CD3)2CO, and CD3CN solutions were studied by 1H, 13C, and 31P NMR spectroscopy. It was found that the compounds under study are highly labile in solution and exist as a variety of tautomers and conformers. The C=O- and P=S-containing derivative was proposed to undergo intermolecular tautomerization.